

The image features a close-up of several white, circular HydroClean plus wound dressings. One dressing in the foreground is shown in detail, revealing its textured surface and a central absorbent pad. The dressings are scattered on a blue background with water droplets. A yellow hexagonal callout box in the upper right contains the text 'What if your wound dressing could do more?'. The overall aesthetic is clean and clinical, with a focus on the product's texture and the water droplets suggesting moisture management.

*What if your
wound dressing
could do **more?***

HydroClean[®] plus

FAQ Document

HydroTherapy[®]

HydroClean[®] plus HydroTac[®] HydroTac[®] Comfort

HARTMANN



Frequently asked questions

– HydroClean[®] plus

INTRODUCTION

What is HydroClean[®] plus?

HydroClean plus is an innovative Hydro-Responsive Wound Dressing (HRWD™) that has been developed to provide an all-in-one cleanse, debride, de-slough, absorb function to facilitate optimal wound bed preparation.

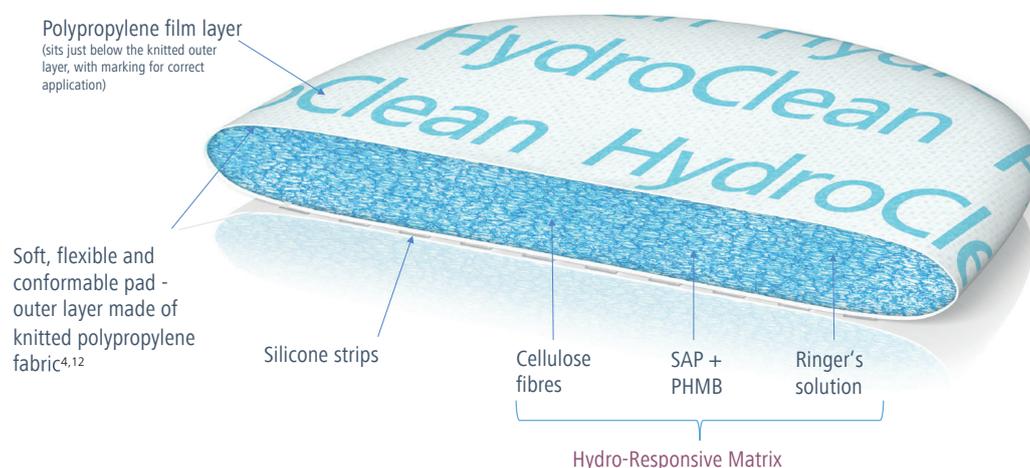


Figure 1: Schematic of HydroClean plus

The dressing is made up of a pad, which contains superabsorbent polyacrylate (SAP) at its core, held within a soft, flexible and conformable pad^{4,12}, with an outer layer made of knitted polypropylene. A polypropylene film layer sits just below the knitted outer layer, with marking for correct application. This layer helps to prevent the dressing pad from drying out. The SAP particles contain Ringer's solution and the wound contact layer is coated with silicone strips. The dressing also contains Polyhexamine Biguanide (PHMB) which is bound to the SAP.

What is the mode of action for HydroClean[®] plus?

HydroClean plus cleanses wounds by releasing Ringer's solution. This removes the harmful components of chronic wound exudate and encourages autolysis of necrosis and slough, which are absorbed into the SAP element of the dressing.^{1,4,10} The dressing has a silicone interface to prevent adhesion to the wound bed.⁴

Frequently asked questions

– HydroClean[®] plus

How does HydroClean[®] plus promote a moist wound healing environment?

HydroClean plus contains a high fluid content in the form of Ringer's solution. The dressing delivers Ringer's solution at a constant rate^{29,30} whilst at the same time the SAP absorbs wound exudate, necrosis and slough – see Figure 1. The maintenance of the wound in a fluidic state promotes a moist wound healing environment.²¹ In addition, the waterproof film backing of HydroClean plus also helps maintain a moist environment by reducing the risk of evaporation.

How does HydroClean[®] plus absorb and donate?



Figure 2: mechanism of absorption/donation of HydroClean plus

HydroClean plus is able to absorb and donate^{10,11,21} fluids due to the unique properties of the SAP particles – see Figure 2. SAP particles deliver Ringer's solution to the wound (blue arrows). At the same time, the dressing pad absorbs bacteria^{1,4,10} and protein-laden fluid into its absorbent core and binds it (red/black arrows). This exchange occurs because the SAP of the wound dressing pad has a higher affinity for the protein in the wound exudate than the salts of the Ringer's solution. In this way, HydroClean plus rinses and cleanses the wound.^{3,4,6}

What is Ringer's solution?

Ringer's solution is a solution containing several salts – Sodium Chloride, Potassium Chloride, Calcium Chloride and Sodium Bicarbonate – dissolved in water.

What are the benefits of using Ringer's solution?

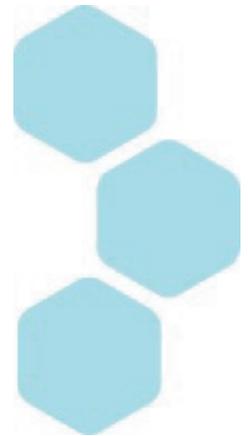
Ringer's solution is specially formulated to create an isotonic solution relative to body fluids at a physiological pH. The buffering capacity of Ringer's solution offers advantages over solutions such as normal saline and may offer benefits for maintaining an optimal pH at the wound surface. Moreover, Ringer's solution cleanses the wound without damaging fibroblasts and myofibroblasts,⁸ key cells in the granulation and tissue remodelling phases.

Frequently asked questions

– HydroClean® plus

HydroClean® plus enables Hydro-Responsive wound healing^{4,10,21}

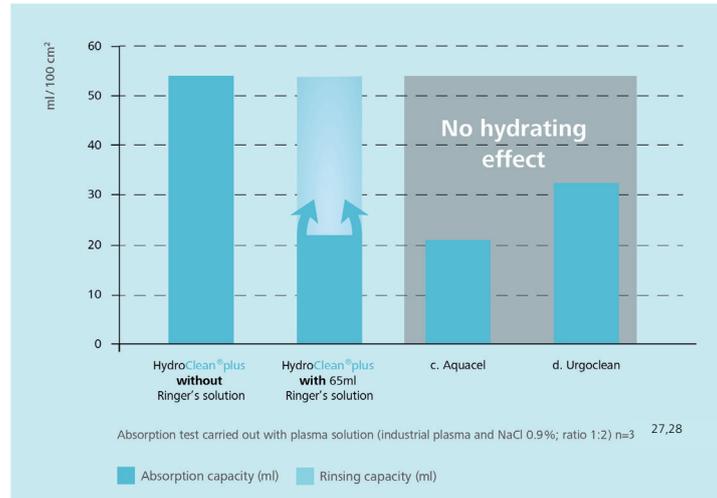
SAP, as a class of molecules, are able to absorb large amounts of fluid because of their chemical characteristics.² SAP may absorb between 30-50 times its own weight when hydrated with saline solutions.¹⁶ HydroClean plus has an absorptive capacity similar to comparable wound dressings. In addition, HydroClean plus also provides an additional cleansing capacity (Figure 3).



How can a wet dressing such as HydroClean® plus absorb wound fluid?

Although it is a wet dressing and the SAP particles are hydrated, there is still capacity within each SAP particle to absorb fluid (Figure 3). Once the Ringer's solution is released, this further increases the free absorption capacity of the SAP particle, thereby increasing the absorption capacity of HydroClean plus.^{27,28}

Figure 3: Comparison of absorption capacities between HydroClean plus and other dressings



Does HydroClean® plus adhere to the wound?

The wound contact layer is coated with silicone strips and are designed to prevent the dressing from adhering to tissue. In all clinical studies undertaken to date, there has been no evidence to suggest HydroClean plus adheres to the wound bed or damages peri-wound skin.^{4,6,11}

How does HydroClean® plus rapidly debride?

HydroClean plus debrides wounds of devitalised tissue via the promotion of the natural process of autolytic debridement.^{6,8,10} This is achieved by the creation of a moist wound environment, softening and promoting the detachment of devitalised tissue from the underlying wound bed. HydroClean plus may also be used to mechanically debride loosely adherent devitalised tissue.²¹

Frequently asked questions

– HydroClean[®] plus

How does HydroClean[®] plus deslough?

As with the promotion of debridement, HydroClean plus desloughs wounds of the fibrin, blood cells and debris that collects in the wound bed via the promotion of autolytic debridement. HydroClean plus facilitates the creation of a moist wound environment, encourages autolysis of sloughy material and its detachment from the wound bed.⁶

How quickly can HydroClean[®] plus debride wounds?

The speed with which HydroClean plus debrides wounds is dependent upon many clinical factors, including wound type. Clinical evidence suggests that wounds are debrided significantly within 3-7 days of treatment.^{5,10,12}

How quickly can HydroClean[®] plus deslough wounds?

The speed with which HydroClean plus desloughs wounds is dependent upon many clinical factors, including wound type and the level of slough present. Clinical evidence suggests that wounds are desloughed significantly within 3-7 days of treatment.^{4,5,6,12}

Does HydroClean[®] plus improve the wound healing process?

HydroClean plus improves wound healing progression via the establishment of an optimal moist wound healing environment and the promotion of wound debridement and desloughing. Necrotic tissue and slough are physical barriers to healing progression^{6,9,10,11} and their removal, together with the benefits of moist wound healing, optimises the wound bed for subsequent healing.

Does HydroClean[®] plus alleviate wound pain?

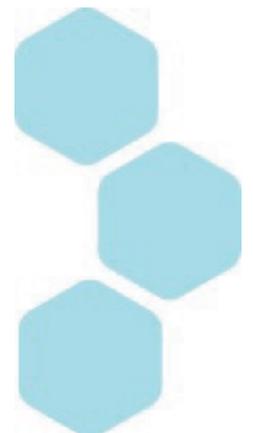
Yes. Clinical studies have reported relief from wound pain when treated with HydroClean plus. Wound pain is reduced when wounds are covered with HydroClean plus due to the dressing promoting a moist wound environment.^{4,5,6,9,11,12} Pain during dressing changes is also reduced by the use of HydroClean plus.^{4,5,15}

What types of wounds is HydroClean[®] plus indicated for?

HydroClean plus can be used on a variety of acute and chronic wounds, in particular wounds with impaired healing tendency. The product is especially suitable for the treatment of chronic and during the cleansing and granulation stage. HydroClean plus can also be used for the treatment of infected wounds.

Can HydroClean[®] plus be used on infected wounds?

Yes. Wound infection is not a contra-indication for use of HydroClean plus. Several case studies have reported use over infected wounds.^{17,18,19} HydroClean plus is not intended to replace anti-microbial therapy (including antibiotics) and infected wounds should continue to be treated as per local clinical protocols.



Frequently asked questions

– HydroClean® plus

Can HydroClean® plus be used to effectively debride and deslough diabetic foot ulcers?

Yes. Case studies have shown effective debridement and desloughing in patients with diabetic foot ulcers.^{9,17,18}

Will HydroClean® plus reduce wound bioburden?

Yes. Necrotic tissue and slough can be a source of bacteria to the wound. As HydroClean plus debrides both necrotic and sloughy tissue, removal of these tissues are important for reducing the bacterial burden within the wound.^{6,9,10,11} HydroClean plus is an effective debrider and deslougher.

Is the PHMB in HydroClean® plus actively released into the wound bed?

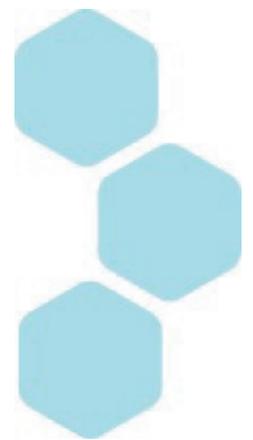
No. PHMB is securely bound to the SAP particles within the dressing and is not released into the wound.^{23,24}

Can HydroClean® plus be used for wound bed preparation?

Yes. The softening and detachment of necrotic tissue and slough by HydroClean plus promotes wound bed cleansing and formation of granulation tissue.^{3,4,5,6,17,19} New wound bed granulation is a key to optimising wound bed preparation. HydroClean plus is an effective debrider and deslougher.^{6,17,18}

The action of HydroClean plus facilitates the removal of barriers to healing, such as:

- It softens and encourages the detachment of necrotic and sloughy tissue promoting the formation of granulation tissue⁶
- It absorbs excess exudate, therefore promoting a moist wound environment¹⁰
- Proteases and bacteria in the wound, which may delay healing, are absorbed into the dressing^{20,25,26}



Frequently asked questions

– HydroClean® plus

APPLICATION

How do I apply HydroClean® plus?

HydroClean plus should be placed directly on to the wound bed with the green striped pattern uppermost, overlapping the wound edges. A skin protectant may be used on the peri-wound area. HydroClean plus cavity may be placed inside a cavity area when the depth is visible and may be moulded into undermined areas. HydroClean plus can then be used to cover the wound.

How do I fixate HydroClean® plus?

HydroClean plus may be fixed using tapes or covered with a secondary dressing (such as a film dressing) as per local clinical protocol and secured with a bandage.

Can HydroClean® plus be cut?

No. Do not cut the dressing pad as internal dressing components may contaminate the wound leading to delayed healing.

Do I need to peel off the outer film?

No. The outer waterproof layer is an integral part of the dressing and is required for optimal functioning of the dressing.

How often should HydroClean® plus be changed?

It is recommended that HydroClean plus can be left *in situ* for up to 3 days. Clinical studies show effective treatment with 3-day dressing changes.^{3,5,19} The dressing should be inspected frequently and should be changed depending on the condition of the wound and surrounding skin.

Can HydroClean® plus overlap the wound margin?

Yes. HydroClean plus can overlap the wound margin.

Can I use a barrier cream under HydroClean® plus?

Yes.

Can HydroClean® plus be used in conjunction with off-loading devices?

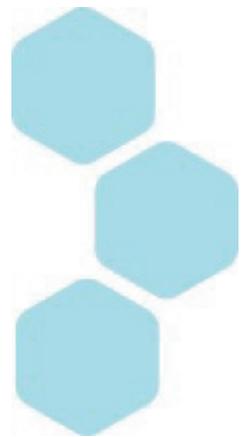
Yes. HydroClean plus may be used in conjunction with off-loading devices but it is recommended clinicians should seek further clinical advice.

Can HydroClean® plus be used in a cavity wound?

Yes. There is a specific cavity dressing within the HydroClean plus range.

Can HydroClean® plus be used over HydroClean® plus Cavity?

Yes.



Frequently asked questions

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Can HydroClean® plus be used under compression therapy?

Yes. Clinical evidence supports the use of HydroClean plus under compression therapy.^{3,5,19}

Should HydroClean® plus be additionally padded before application of compression bandaging?

Depending on the shape of the leg, additional padding may be required.

Does HydroClean® plus alleviate pain experienced at dressing change?

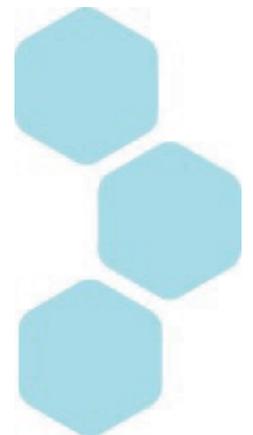
Yes. Clinical evidence has shown a reduction in pain at dressing change.^{8-10,13,14,28} The wound contact layer of HydroClean plus is coated with silicone strips that are designed to prevent the dressing from adhering to the wound.

Can HydroClean® plus aid wound assessment?

The presence of devitalised tissue such as necrotic tissue and slough reduces the ability of clinicians to assess adequately the condition of diabetic foot ulcers. HydroClean plus aids wound assessment by removing devitalised tissue allowing visual access to the wound bed.^{4,6,9}

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PAUL HARTMANN LIMITED
Heywood Distribution Park,
Pilsworth Road, Heywood, OL10 2TT
Tel: **01706 363200**
Fax: **01706 363201**
E-mail: info@uk.hartmann.info

www.hartmann.co.uk

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